CEREBRAL SYPHILIS.

BY HENRY ALFRED ROBBINS, M. D.,
OF WASHINGTON, D. C.

With the compliments of
Dr Robbins

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On the 12th day of April, 1893, I delivered a lecture to a class of medical students on the subject of internal syphilis, which was published in the *Virginia Medical Monthly* of July, 1893. I called attention to the fact that syphilis was not mentioned as a cause of cerebral diseases by many authors of publications on diseases of the nervous system. The possibility of said disease being a cause of any mental trouble was not mentioned by the renowned Dr. Abercrombie, of Edinburgh, in his work on "*Diseases of the Brain and Spinal Cord.*" This was the popular text-book ,and was the authority not very many years ago. Trousseau never mentioned cerebral syphilis, attributing nervous symptoms to cranial periostitis. In fact, Sir Astley Cooper, the most

* Read before the Medical Society of the District of Columbia on February 27th, 1895.

distinguished student of John Hunter, and the great pathologist himself, taught that the vital organs were never attacked by syphilis.

It is only within the past few years that, owing to the discoveries made in the pathological rooms, the ravages made by syphilis have been comprehended. It was in 1869 that Professor Rudolf Virchow, in his anatomical laboratory at Berlin, cleared up the nature of syphiloma of the brain and its membranes. Several years prior to this, 1863, Dr. Sam'l Wilks, of Guy's Hospital, took the lead in pointing out the injurious effects of syphilis in the internal organs. Modern research, he then said, has been mainly in the direction of discovering a wider influence for the venereal virus, and tends to show that the internal organs may be affected equally with the external. As Dr. Wilks expresses it: "Syphilis, in its ultimate form, is capable of affecting every organ of the body; the internal may become equally as obnoxious to the effects of the virus as the external. Many obscure and intractable organic disorders are cases of visceral syphilis, and it cannot be too forcibly impressed upon the young practitioner that syphilis may affect not only the cranium, but the brain within it, or the nerves; not only the muscles of the limbs and tongue, but the heart; not only the pharynx, but the œsophagus; not only the larynx, but the trachea, bronchi, and lungs; also the liver, spleen, and other viscera." (*Guy's Hospital Report*, Vol. IX, 1863.)

In 1874, Professor Heubner described certain lesions as characteristic of syphilis. He described fibroid indurations, and the syphilitic tumors, known as gumma, and certain changes in the arteries. "In the cerebral arteries, the changes produce opacity and marked thickening of the vessel, with considerable diminution in its calibre. It is this diminution of the lumen of the vessel which is especially characteristic. When transverse sections of the vessels are examined microscopically, the principal change is seen to be situated in the inner coat. This coat is considerably thickened by a cellular growth. The growth which is limited internally by the endothelium of the vessel, and exter-

nally by the membrana fenestrata, closely resembles ordinary granulation, tissue consisting of numerous small round and spindle-shaped cells. The tissue appears gradually to undergo partial development into an imperfectly fibrillated structure. In addition to this change in the intima, the outer coat is abnormally vascular and infiltrated with small cells, and this cellular infiltration usually invades the muscular layer. The result of these changes in the inner coat is to diminish very considerably the lumen of the vessel; and the consequent interference with the circulation frequently leads to coagulation of the blood (thrombosis) and cerebral softening."

Associated with Dr. Samuel Wilks at Guy's Hospital was the late most accomplished pathologist, Dr. Walter Moxon. Together they wrote their great work on pathology, which is in daily use by every anatomist For several months, I had the honor of being an assistant to Dr. Moxon in the *post-mortem* room of Guy's Hospital. The changes which occur in the brain in this dread disease were thus described by him: "Syphilis attacks the surface of the brain and the membranes; it attacks them in limited spots, and spreads slowly. The morbid changes are, on the one hand, adhesion of the membranes to each other and to the surface of the brain by means of an adventitious material of firm consistence and yellow color, which may be called lymph, but is harder, tougher, and more opaque. This exudation may be found at any part of the surface; it invades and destroys the grey matter, interferes with the supply of blood, and when it occupies the membranes at the base of the brain surrounds and involves the nerves in the inter-cranial part of their course. In the examination of the brain after death (over 1,000), I have been surprised to find in how small a number this disease appeared to originate in the under layer of the periosteum of the endo-cranium. I think this, perhaps, may be accounted for by the fact that when a gumma of the inner table of the skull does arise, the clinical features, evidenced by pain, etc., are so marked (for these manifestations usually occur with the existence of ex-

ternal gummata) that remedial measures are adopted early, and thus promotes absorption before the membranes of the brain become involved."

In 1886, Dr. Wilks, in a lecture on "Medical Treatment," said: "I think I can show you how an improved treatment has come about, not by the discovery of new drugs, but by a better knowledge of the nature of disease and by clinical observation. Thousands of persons are now cured of epilepsy, paralysis, and various other nerve disorders by means of iodide of potassium, and why? Because syphilis was found to attack the brain and internal organs, when a more extended and closer observation of morbid structures was begun to be made in the *post-mortem* room. Let me most emphatically dwell upon this point, that an improved treatment, saving thousands of lives annually, arose, not from the discovery of a new drug, but from work in the dead-house."

Verily, the more you make a study of syphilis, the more you will consider it a Proteus, capable of assuming hundreds of different forms.

Alfred Fournier, in his book, "*La Syphilis du Cerveau*," published in Paris in 1879, makes us acquainted with the more common, as well as the more usual forms, which brain syphilis is apt to assume at the bedside. Fournier describes six different forms as follows: The cephalalgia, the congestive, the convulsive or epileptiform, the aphasic, the mental and the paralytic. Before Fournier gave this admirable and accurate description, we were groping in the dark, as I am acquainted with no other work which even attempts a description, except that in later years of Dr. Thomas Stretch Dowse, and that you will find only on the shelves of a medical library or of a neurologist.

As physicians, you will be called in during syphilitic coma or hemiplegia. Althaus, of London, says: "A knowledge of syphilitic coma is of great practical importance, inasmuch as it requires an entirely different treatment from other forms of coma, and an incorrect diagnosis, is in such a case likely to seal the fate of the patient."

Lack of time will prevent my referring to the different forms of coma, or where there is a loss of consciousness or motion, and where you will have to make a diagnosis as to the cause—such as syncope, asphyxia, epilepsy, puerperal eclampsia, uræmic coma, alcoholic stupor, the comatose stages of eruptive fevers, certain forms of gout and rheumatism, and the poisonous effects of opium, belladonna, lead, etc.

It is a maxim in whist that, 'when in doubt, lead trumps.' Remember what Dr. Thomas S. Dowse says of iodide of potassium: "In nervous diseases, the physician commands this drug to carry out his object, and it does it, too, as surely, as completely, and effectually as the surgeon's knife in excising a tumor."

There seems to be some question as to whom is due the credit of first recommending the use of iodide of potassium in the treatment of syphilis. Mr. James R. Lane stated, in a lecture published in the *Lancet* June 23rd, 1877, on the syphilitic affections of the viscera: "I do not think it is sufficiently remembered that we owe to a physician, the late Dr. Robert Williams, of St. Thomas Hospital, the introduction of the iodide of potassium in the treatment of syphilis, without doubt the greatest improvement which has been effected in this country."

At the meeting of the British Medical Association held in Dublin, August 3rd, 1887, Dr. C. R. Drysdale, of London, said: "A statue should be erected to Dr. Wallace, of Dublin," who was the discoverer of the virtues of iodide of potassium in syphilis. Before his day, syphilis was a terrible disease"

Coma is the fore runner to paralysis, which is the most frequent result of the syphilitic poison upon the nervous system. That grand old Quaker, Jonathan Hutchinson, gives the following advice: "So frequently is syphilis a cause of paralysis that in all cases where it happens without evident cause, and in which syphilitic antecedents are even possible, it is advisable to try the effects of specific treatment. Undoubtedly we often, by such means, get a clue to

the real nature of many an obscure affection of the nervous system."

Heubner gives five types of symptoms resulting from syphilitic brain lesions:

I. Psychical disturbances, with epilepsy, incomplete paralysis (seldom of the cranial nerves), and a final comatose condition, usually of short duration.

II. Genuine apoplectic attacks, with succeeding hemiplegia, in connection with peculiar somnolent conditions, occurring in often repeated episodes; frequently phenomena of unilateral irritation, and generally at the same time paralyses of the cerebral nerves.

III. Course of the cerebral disease similar to paralytic dementia.

IV. Psychical disturbances without complete epileptic convulsions, associated with palsy of the basal nerves, and often with partial hemiplegia.

V. Paraplegia associated with ocular or other symptoms, indicative of lesions at the base of the brain.

The mental symptoms are not definite as regards any special feature. It is the want of coincidence in the mental symptoms, as in the paralyses, that strongly characterizes syphilitic diseases of the brain, as Professor Heubner describes it, "The half and half incomplete nature of the severe symptoms, the impairment of the consciousness without its entire destruction, the loss of voluntary activity without the complete abolition of voluntary impulse, the half awake and half dreamy condition of the patient, are strong peculiarities of syphilis."

Not infrequently among the first of the mental symptoms is the lack of æsthetic feeling. Sometimes from the purest they become the most obscene.

Dr. Grundy reports the case of a most respectable and highly connected young lady, whose friends had noticed in her a growing tendency to "*double entendres*," to slight smuttiness in conversation, and they were at a loss to account for this. He suspected syphilis, but was not for a long time listened to. Finally, after getting the patient

on specific treatment, these morbid peculiarities disappeared.

Dr. A. H. Newth, in the *Lancet* of October, 1892, publishes an extremely interesting article on syphilitic insanity, in which he refers to two cases reported by Dr. Clouston. One a clergyman who, twelve years after syphilitic insanity, conducted himself most obscenely towards the female members of his congregation. The other was a medical man, who, though otherwise able to conduct his practice well, misconducted himself towards young girls. Both of these had to be placed under treatment in an asylum. In the *Virginia Medical Monthly* of June, 1892, in an article called the "Third Act of the Drama of Syphilis," I reported two cases of insanity caused by syphilis. Dr. Savage, of London, states that syphilitic insanity is rare, and says that some acute cases follow the dilirium, which may follow with the case. Many lunatics exhibit venereal diseases contracted while insane. He also states insanity may follow the onset of secondary symptoms of the more severe type, thus with optic neuritis, with ulcerations about the face, or it may appear with the onset of local paralysis of the third or other cranial nerves. It may occur with the neuralgia or sleeplessness of syphilis. The disfigurement may cause insanity. There are cases where syphilis has acted as a moral cause, and has set up a form of hyperchondriasis. Epilepsy may occur with or without insanity. The epilepsy may be the chief symptom, or only a sign of widely spread disease, or it may be a symptom of general paralysis, or of locomotor ataxy. Dr. Savage reports a group of cases, in which progressive weak mindedness follows constitutional syphilis. It may be preceded by some motor symptoms, by either the ocular motor trouble, a monoplegia, or hemiplegia, in one by aphasia, and in another with other motor troubles. There was another group in which sensory tronble, some temporary loss of vision, or taste, or hearing, some aphasia, or some temporary giddiness may be the first symptom, which is followed by progressive degeneration, which is not of the same kind, and not to be grouped with the general paralysis

of the insane depending upon syphilis. He classified these cases as organic dementia of syphilitic origin.

Dr. Spitzka reports an unusual case of mental syphilitic manifestations occurring in an actor. This patient had abolition of both knee-jerks. His disease was at times controlled by treatment, and then recurred. He had had, in the course of one day, fifty or sixty attacks of a peculiar kind of "*petit mal*," in which he lost consciousness, while coming upon the stage oftentimes, but so briefly that he could recollect himself. In one case, where he had to cross a foot bridge, he had an attack in the course of passing over, but he went on as if nothing had happened, the "*petit mal*" losing its character as a loss of consciousness, and becoming replaced by a peculiar sensory disturbance. He found that accompanied by the prodromal feeling all the faces of the audience were exactly the same. This sensation passed like an electric flash. These peculiarities continued, but at longer intervals.

At the meeting of the British Medical Association, 1887, held at Dublin, a paper was read on Syphilitic Aphasia by Dr. Drysdale, of London. The author said he had seen a case of syphilitic aphasia as early as 1861, in Dr. Gubler's ward, at the Hopital Beaujean at Paris. That year Dr. Broca wrote his work on aphemia, a term altered to aphasia by Professor Trousseau. At that time it was not, as now, known that syphilis could cause aphasia by narrowing the calibre of the vessels of the brain, or by formation of gummy tumors. In all cases of syphilitic aphasia which he had treated there had been right hemiplegia. The first of these he had under his care was that of a gentleman who, in 1851, contracted syphilis. He was a most intellectual man, and a celebrated professional. This gentleman had suffered for many years with fits of vertigo, which yielded well to iodide of potassium, and suddenly, in 1871, or twenty years after the initial lesion, he had an attack of right hemiplegia and aphasia. His general health continued pretty good, but the symptoms of complete aphasia and hemiplegia remained quite unaffected by treatment. He died in

1886, after being aphasic for fifteen years. Another distinguished literary man contracted syphilis in 1870, and had symptoms resembling locomotor ataxia three years subsequently, with mental disturbances. In 1876 he was attacked with right hemiplegia, and was speechless for a time. Remedies were of great service to him at that date. However, in 1887, being in Ireland on a visit, he was carried off by a cerebral attack.

In the *Virginia Medical Monthly* for October, 1894, in an article called "Unmerited, or Non-Venereal Syphilis," I reported the case of Professor Von Zeissel, who died of cerebral syphilis, many years after acquiring the disease, from a wound received in opening a syphilitic bubo.

At a recent meeting of the New York Neurological Society, Dr. Nammack presented two cases of syphiloma of the brain. The first occurred in a cloth examiner, aged thirty-four, who six weeks after contracting a chancre, suddenly became unconscious, and had no recollection of what transpired during the succeeding forty days. Following this there was right-sided hemiplegia, which confined the man to bed for three months. As soon as the initial lesion was discovered, the patient was put on specific treatment, and this was vigorously continued for a long time. About six weeks after the treatment was discontinued the patient developed severe occipital headache and bi hemianopsia, with ataxia and exaggeration of the knee jerks. Under specific treatment these symptoms almost entirely disappeared. It is believed that the lesion was probably a gumma situated in the substance of the optic chiasm.

The second patient was a man, forty four years old, who complained of dizziness, bilateral occipital headache, tinnitus, absolute deafness of the left ear and diplopia. He also had the characteristic cerebellar gait. The history of syphilis in this case was rather obscure, but under specific treatment the man's symptoms almost entirely disappeared. The diagnosis was gumma in the cerebellar region.

At the meeting of the American Neurological Association, held in New York city, 1894, Dr. Charles L. Dana re-

ported 182 cases of apoplexy, of which 100 were non-fatal, and 82 fatal. Dr. Dana stated: "Taking hemiplegia as a whole, I find that a very distinct history of syphilis was found in 36 out of the total 100 non-fatal cases. * * * *This fact that syphilis causes one-third of all cases of apoplexy has not, I think, been heretofore brought out, though I feel sure that the experience of neurologists will confirm it.*"

Folet reports a case of syphilitic hemiplegia occurring in a man aged 37, in whom the paralytic symptoms developed in three days, and who recovered in a year.

Boziere reports a similar case occurring in a man aged 30, in whom the symptoms developed suddenly, and who likewise recovered in a year.

Eisenlohr reports a case. Patient aged 30; had syphilis eleven years previous to an attack of rectal and vesical paralysis with paralysis of the right leg, paresis of the left, and greater reduction of cutaneous sensibility in the latter than the former. Improvement followed treatment, but later there was paresis of both legs, without ataxia. At the necropsy, the dura spinalis was found attached to the posterior portion of the cord by meningeal inflammation from the height of the tenth dorsal nerve to the cauda equina.

At the Congress of German Physicians, held in Vienna, 1894, Dr. Jolly reported a case of cerebral syphilis in which he was able to demonstrate by autopsy the dependency of word deafness and aphasia on a complete destruction of the parietal lobe, the two first temporal lobes, the angular gyrus, præcuneus and cuneus. The patient was unable to read his his own name, or to write from dictation. The word deafness Professor Jolly considers was due to the lesion in the temporal lobe, and the loss of speech possibly to the entire destruction of the auditory centre and areas.

Alfred Fournier, in a lecture, thus sums up his views on general paralysis in syphilitic patients: "Undoubtedly, general paralysis does occur in syphilitic subjects sometimes, but sometimes only, and in quite too exceptional a manner to warrant our regarding it as depending directly upon the evolution of the syphilitic morbid processes. It is very

reasonable to suppose that a disease which affects the nervous system as profoundly as does syphilis, may be the determining cause in some cases. In syphilis itself the mental disturbances are not quite those of general paralysis; they may, indeed, present all varieties of excitement, violence, depression, or dementia, but they do not follow any special type, as do those of general paralysis. The condition of self-satisfaction of unfortunate subjects of general paralysis, who imagine themselves kings, prophets, great artists, who revel in fancied wealth, and propose every day fresh schemes, magnificent in the extravagance and boundlessness of their scope, all that makes up the common description of their delirium, is absent, or, at least, only exceptionally present in syphilis, and when present the extravagance is tame and humble in comparison. Tremor may be present in syphilis, but is only occasional; that of the tongue especially is very rare, while the tremor of the upper lip, so frequent in general paralysis, is perhaps never present—at least Professor Fournier has never seen it. Above all, the tremor lacks the constant, fibrillary, vermicular character of that of general paralysis. These differences are not merely of degree, but definite, and more easily recognized clinically than described by words.

Paralysis and paræsis of all kinds are common in syphilis, and correspond to what is ordinarily described by these terms; whereas in general paralysis it is more a want of co-ordination, and defect of precision than abolition of muscular power. Again, in syphilis there is excessive frequency of partial paralysis affecting a special predilection for certain parts; for example, the muscles of the eye-ball, a peculiarity which is not found in general paralysis. Hemiplegia, transient or permanent, is often one of the earliest phenomena of cerebral syphilis, and of great frequency in some period of the disease. Finally, in syphilis, motor phenomena, apoplectic attacks, etc., commence the affection; in general paralysis, intellectual and moral disturbances prelude the symptoms of cerebral disorganization, while similar disturbances mark the course of the two diseases,

syphilis being irregular, variable in its progress, in the succession of phenomena, and its duration; general paralysis, on the other hand, is regular, and of definite duration. The comparison of the general state of the patients in the two diseases gives not less striking distinctions; in syphilis, cachexia; in general paralysis, maintenance of nutrition, even *embonpoint*, up to the very last.

Finally, syphilis may be regarded as at least possibly curable, gloomy as is the result in most cases, yet differing even in this from the other absolutely incurable malady."

In 1886 I was the physician to a family whose adopted son was of rather unusual mixed nationalities. The father of the boy was a Chinaman, and his mother was born in Ireland. Their union was sanctioned by the church. In appearance he resembled the father, looking like an out-and-out Mongolian. At that time he was what might be called an interesting child; was effeminate in appearance and manners. He was devoted to his Sunday-school, and naturally he was a universal favorite with all good people. He was then about fourteen years old. In about a year he commenced to grow rapidly, and I noticed a peculiar shambling gait. He was knock-kneed. About this time he commenced to have persistent "tinnitus aurium," and he was treated by two of our most eminent aurists. I placed him on a "mixed treatment," with the effect of stopping "the tic." I ascertained afterwards from the former family physician, who lives in South Carolina, that prior to the birth of the subject of this history, he had attended the father with the worst case of syphilis he had ever seen. The boy very gradually, almost imperceptibly failed from day to day. I noticed a change in his naturally refined feelings. He became a victim of almost constant self-abuse. There was no aphasia. He would at times lose control of his sphincters. At this time his voice began to change, and he passed from childhood to young manhood. The bland and childlike countenance vanished, and he became a drivelling idiot. The Sunday-school instruction faded from his mind, and for hours at a time he would repeat certain profane words. He would at times appear to be dying, and I or some other physician would be called, but he would rally, and live on for months. In one of these attacks he was seen by Dr. Godding. In the summer of 1889 I met Dr. Godding in consultation in another case, and he expressed

astonishment that the patient should have lived so long, and I promised to inform him when the end came, so that he could ask Dr. Blackburn to make a post-mortem.

The end came the last of December; Dr. Blackburn made the autopsy. There were present Drs. Edes, Kerr and myself. I did not expect to publish this case, and took no notes, and will have to trust to memory, regretting that I cannot more fully give the post-mortem appearances. I had diagnosed extensive ramollissement. There was considerable shrinkings of the brain, and great œdema, and opacity of the pia-mater, and arachnoid. The convolutions were abnormal, and there was extensive softening.

On the 11th of December, 1894, I was consulted by Mr. ———, aged forty-two years, who stated that for many months he had had persistent headaches, occuring at night. He had consulted many physicians, who had treated him for neuralgia of malarial origin. The treatment, he said, making his condition worse. I obtained the following history: Eight years ago he had had a suspicious sore on the prepuce. At first his physicians were in doubt whether the sore was the initial lesion of syphilis or not. Subsequent syphiloderms, however, put at rest the question of diagnosis. He was placed under mercurials, and in a few months he was pronounced cured.

For eight years he had taken no treatment, and, as a rule, enjoyed good health. I gave ℞ containing hydrarg. bichlorid. and iodide of potassium, which, he stated, relieved the headache. On the evening of the 22d he appeared bright and cheerful. On the next evening he called, and said that he had not taken the medicine, and that he was not feeling well. While he was standing up about to leave, he said he felt exactly as if some one had struck him a violent blow on the back of the head. He sank to the floor, and it was with considerable difficulty I lifted him to my sofa. In half an hour he was able to get up, and he passed some urine. I examined it and found no albumen or sugar; specific gravity normal. I took him home in a carriage and placed him in bed, and applied oleate of mercury (10 per cent.) over his bald head and the nape of his neck. There was no elevation of temperature; pulse 72—full and regular. I commenced giving him fifteen grains (saturated solution) of iodide of potassium every three hours. The next day he complained of thickness of speech, and a sense of numbness on the right side. I gradually increased the iodide until he was taking 35 grains every three hours.

There was no gastric disturbance. After a time there was slight coryza, and I commenced decreasing the dose until he was taking ℈j. every three hours. Patient daily improved in strength; headache disappeared. On January 26th I prescribed the following:

℞. Hydrarg. bin-iodidi.....grs. ij
Ammonii iodidi.....ʒij
Potass. iodidi.....ʒvj
Tinc. gentian comp.....f. ʒiv

M. Sig.—Teaspoonful in water three times a day, after meals.

Patient would go out walking or driving every day. On January 28th he went to New York city, and I gave him a letter to Dr. R. W. Taylor, who stands, as you all know, so pre-eminent in our profession. I gave a favorable prognosis in this case.

On the first of February I received a letter from Dr. Taylor, which contains the following sentence, which gave me supreme satisfaction: "Your diagnosis, prognosis and treatment are all correct. I think, with you, that the patient can be cured, provided he follows treatment repeatedly. He undoubtedly has had endarteritis of syphilitic origin."

1750 *M Street.*